May 23, 1961 A. BEAUDOIN 2,985,292

CORE PLUG

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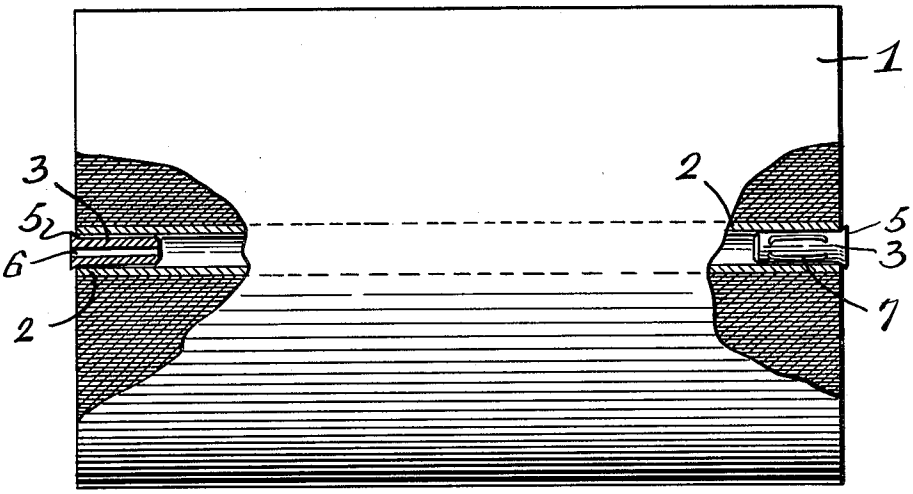


Fig. 1

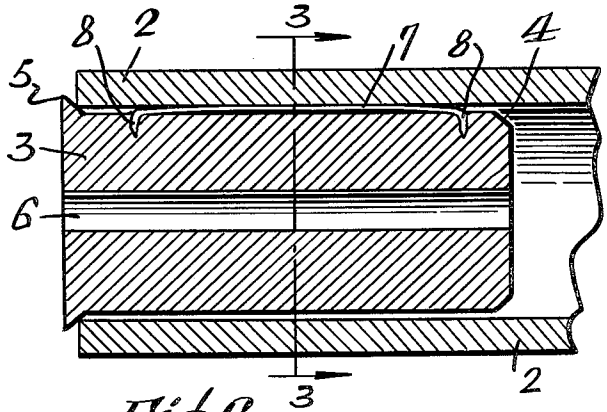


Fig. 2

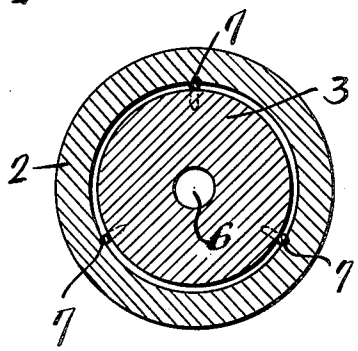


Fig. 3

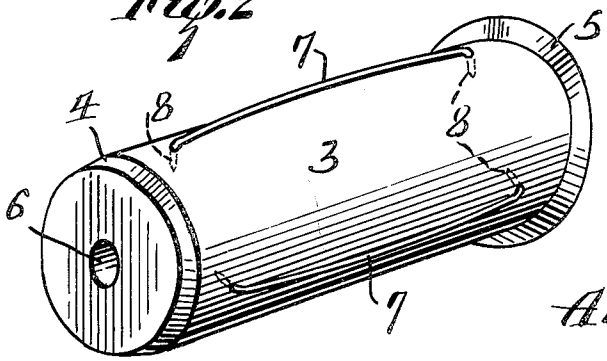


Fig. 4

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CORE PLUG

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3 Claims. (Cl. 206—59)

The present invention relates to core plugs, and more particularly to an improvement to core plugs of the type which are used for insertion into the hollow core of newsprint paper rolls or other like rolls of paper, and other materials.

It is known that the cores of newsprint paper rolls are made of cardboard and are consequently easily damaged and when damaged it is difficult to mount the same on the supporting shaft of the printing machine. In order to prevent damage of the ends of the cores during shipping, it is usual to insert a plug of the same diameter therein. These plugs are usually made of wood for economical reasons. However, it is known that wood decreases in diameter when drying and it frequently happens, especially when the rolls are stacked, that the wooden plugs become accidentally dislodged from within the cardboard core and the dislodged plugs become located between the wrapping paper and the newsprint paper of the roll and when such rolls are stood on end the dislodged plugs very frequently ruin the entire roll. This problem is a serious one in the pulp and paper industry.

It is therefore the general object of the present invention to provide a core plug of the character described which will obviate the above noted disadvantages and which will yet be of highly economical and simple construction such that it can be thrown away after one use.

A more specific object of the present invention is the provision of a core plug of the character described, which will remain firmly in position within the core despite variations in the diameter of the plug and also in the internal diameter of the core itself.

The foregoing and other objects of the present invention will become more apparent during the following disclosure and by referring to the drawings, in which:

Figure 1 is a side elevation partly in section of a newsprint paper roll provided with the core plugs of the present invention;

Figure 2 is a longitudinal partial section of one end of the core and of a core plug inserted therein;

Figure 3 is a cross section along line 3—3 of Figure 2; and

Figure 4 is a perspective view of the core plug.

Referring now more particularly to the drawings in which like reference character indicates like elements throughout, reference numeral 1 indicates a roll of newsprint paper wound on a central hollow cardboard tubular element or core 2. It is known that newspaper rolls are very heavy and must often be shipped long distances and therefore the ends of the core 2 must be protected by a wooden plug. In accordance with the present invention, there is provided a wooden plug 3 of cylindrical shape, the inner bevelled end 4 of which is inserted first into the core until the bevelled flange 5 of the outer end of

the plug abuts against the edge of the core 2, in the manner shown in Figure 2.

The plug 3 is solid, except for a central bore 6 extending throughout said core and having a diameter much smaller than the total diameter of the plug. The plug 3 has a length at least equal to its diameter.

In accordance with the present invention elastic or resilient members are disposed at the periphery of the plug in order to engage the inner surface of the core 2 and prevent disengagement of the plug during shipping of the roll 1 and despite variations in the diameter of the plug or internal diameter of the core 2. The resilient members are constituted by wires 7 disposed longitudinally and at equal distances around the outer surface of the plug 3 and provided with right angle pointed tips 8 which are driven into the wood of the plug adjacent the ends of the latter. The wires 7 are outwardly curved longitudinally such that the middle part of said wires normally projects radially outwardly from the outer cylindrical surface of the plug and with respect to the end portions of the wires 7 immediately adjacent the tips 8.

Due to their resiliency and their curved condition, the wires 7 engage the inner surface of the core 2 and compensate for any play which can exist or can eventually be produced between the external diameter of the plug 3 and the internal diameter of the core 2.

In the drawings, there are three equally spaced wires 7 but the number can be varied if so desired. The wires partially enter the relatively soft cardboard material of the core and produce sufficient friction to positively prevent accidental removal of the plugs 3 from core 2. However, the plugs 3 can be removed easily when so desired by inserting a suitable instrument through bore 6.

While a preferred embodiment in accordance with the present invention has been illustrated and described, it is understood that various modifications may be resorted to without departing from the spirit and scope of the appended claims.

What I claim is:

1. A plug made of wood adapted to be inserted within the end of a tubular core made of relatively soft material, said plug composed of a cylindrical solid body having an axial through bore of a diameter much smaller than the diameter of said body, and having a radially projecting flange formed at one end only of said body, and a plurality of resilient wires extending longitudinally over the cylindrical surface of said body and having ends secured to said body adjacent the ends of the latter, said wires being parallel between themselves, spaced from one another around said body and curved radially outwardly between their secured ends so as to have their middle part spaced from said cylindrical surface of said body, said wires being adapted to engage the inner surface of said core and maintain the plug in position within the hollow core despite variations in the external diameter of said plug and the internal diameter of said core.

2. A plug as claimed in claim 1, wherein the ends of said wires are bent at an angle and form pointed tips driven into said body to secure the wires in position.

3. A plug as claimed in claim 2, wherein said body has a length at least equal to its diameter.

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